DETAILED OFFICE ACTION

1. This action is responsive to the communication received March 9th, 2011. Claims 1, 5, and 12 have been amended. Claims 4, 9, and 20-22 have been canceled. Claims 1-3, 5-8, and 10-19 have been entered and are presented for examination.

2. Application 10/561,141 is a 371 of PCT/US2004/20894 (06/30/2004) which claims benefit to Provisional Applications 60/483,785 (06/30/2003) and 60/496,248 (08/18/2003).

3. Applicant's arguments, filed March 9th, 2011, have been fully considered and are persuasive, but deemed moot in view of the new grounds of rejection.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, all the features of Claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-2, 5-7, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa (US 7,352,726) in view of Ajanovic et al. (US 2004/0044820) in view of Koga (US 2002/0141446).

Regarding claim 1, Fujisawa discloses a method for transferring packet based digital data between a first communications network and a second communications network **(see Figure 1, Ethernet Sub-network 2, Bridge 4, and IEEE 1394 Sub-network 3 [packets of data are transmitted and received in the Ethernet network and the 1394 network via Bridge 4])**, said method comprising the steps of: receiving a stream of packets based on digital data from the first communications network **(column 5, lines 26-29 [the bridge transforms a packet transmitted from the Ethernet sub-network into a predetermined system format and transmits it to the 1394 network])**; the first communications network has a prioritized communications protocol **(It is well known in the art the Ethernet supports QoS protocols such as MPLS and DiffServ)** and modifying header information associated with the data packets in the stream into a format suitable for communication through said established channel for transfer to said second communications network **(column 5, lines 26-32 [the bridge transforms the packet, sent from the Ethernet network, into a predetermined system format in the data link layer and transmits it to the 1394 and vice-versa])**

and the second network having a communications protocol that allows for the setup and communications over discrete channels of a reserved bandwidth **(see IEEE 1394 Sub-Network 3)**. Fujisawa does not disclose determining a priority code associated with a data packet of said stream; determining whether to ,open a channel comprising an isochronous channel or an asynchronous channel in response to the priority code; using the presence of the priority code as an indication for setting up the channel for communicating information in said stream of packet based digital data to a second communications network. However, Ajanovic et al. discloses **separate VCs are used to map traffic that would benefit from different handling policies and servicing priorities. For example, traffic that requires deterministic quality of service, in terms of guaranteeing X amount of data transferred within T period of time, can be mapped to an isochronous (time dependent) virtual channel. Transactions mapped to different virtual channels may not have any ordering requirements with respect to each other. That is, virtual channels operate as separate logical interfaces, having different flow control rules and attributes (paragraph 0118)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Ajanovic et al. into the system of Fujisawa. The method of Ajanovic et al. can be implemented by enabling IEEE 1394 terminal to set up an isochronous connection based on the QoS determined from the traffic. The motivation for this is to set up a reliable connection to send time sensitive information across the network.

The references as applied above do not explicitly disclose determining whether said priority data packet requires transmission to a second device associated with said second communications network over a reserved bandwidth channel based on the priority code included in the prioritized data packet and establishing a reserved bandwidth data transmission channel for communicating said data stream to said second device. However, Koga discloses such a feature **(paragraphs 0049-0054 and see Figure 1 [the QoS manager receives a packet with a QoS parameter; the packet is determined to have to travel to second network of a different protocol; the manager determines whether there is sufficient bandwidth for the transmission of the stream at the desired QoS parameter; if the is sufficient bandwidth, the bandwidth is reserved and the stream of data is sent to device in the secondary network])**.

Therefore, it would have been obvious to one of ordinary in the art at the time the invention was made to implement the method of Koga into the system of the references as applied above. The method of Koga can be implemented by implementing a QoS manager in the IEEE 1394 network. The motivation for this is to enable the system to keep track of bandwidth allocation of the secondary network (i.e. the Ethernet Network) wherein the information can be used to accept or reject transmissions destined for the secondary network.

Regarding claim 2, Fujisawa further discloses that the first network is an Ethernet network and the second communications is an IEEE 1394 network **(see Figure 1, Ethernet Sub-network 2, Bridge 4, and IEEE 1394 Sub-network 3 [packets of data**

are transmitted and received in the Ethernet network and the 1394 network via Bridge 4]). The references as applied above disclose all the recited subject matter in claim 1. However, Ajanovic et al. further discloses that the established channel is an isochronous reserved bandwidth channel **(paragraph 0118 [the isochronous VC is established to forward time sensitive traffic with a specified QoS requirement])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Ajanovic et al. into the system of the system of the references as applied above. The method of Ajanovic et al. can be implemented by enabling IEEE 1394 terminal to set up an isochronous connection based on the QoS determined from the traffic. The motivation for this is to set up a reliable connection to send time sensitive information across the network.

Regarding claim 5, Fujisawa discloses an apparatus for proving packet-based digital communications between a first network communications network and a second communications network **(see Figure 1, Ethernet Sub-network 2, Bridge 4, and IEEE 1394 Sub-network 3 [packets of data are transmitted and received in the Ethernet network and the 1394 network via Bridge 4])**, the apparatus comprising a first transceiver for communicating with the first network **(see Figure 2, Ethernet Interface 13)**; a second transceiver adapted for communicating with the second communications network **(see Figure 2, 1394 Interface 14)**, a processor in communication with the first and second transceivers **(see Figure 2, CPU 11)**; wherein the processor is adapted to perform a first modification process to convert a data packet received form the first transceiver into a format suitable for communication through the second network and

the processor is further configured to perform a second modification to convert a data packet received from the second transceiver into a suitable format for communication through the first transceiver to the first network **(column 5, lines 26-32 [the bridge transforms a packet from the Ethernet network into a predetermined format in the data link layer and transmits it to the 1394 network and vice-versa])**. Fujisawa does not disclose determining a priority code associated with a data packet of said stream; determining whether to ,open a channel comprising an isochronous channel or an asynchronous channel in response to the priority code; using the presence of the priority code as an indication for setting up the channel for communicating information in said stream of packet based digital data to a second communications network. However, Ajanovic et al. discloses **separate VCs are used to map traffic that would benefit from different handling policies and servicing priorities. For example, traffic that requires deterministic quality of service, in terms of guaranteeing X amount of data transferred within T period of time, can be mapped to an isochronous (time dependent) virtual channel. Transactions mapped to different virtual channels may not have any ordering requirements with respect to each other. That is, virtual channels operate as separate logical interfaces, having different flow control rules and attributes (paragraph 0118)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Ajanovic et al. into the system of Fujisawa. The method of Ajanovic et al. can be implemented by enabling IEEE 1394 terminal to set up an isochronous connection based on the QoS determined from the

traffic. The motivation for this is to set up a reliable connection to send time sensitive information across the network.

The references as applied above do not explicitly disclose establishing the need to set up a reserved bandwidth communications channel through said second transceiver based upon the value of said priority code received by said first transceiver. However, Koga discloses such a feature **(paragraphs 0049-0054 and see Figure 1 [the QoS manager receives a packet with a QoS parameter; the packet is determined to have to travel to second network of a different protocol; the manager determines whether there is sufficient bandwidth for the transmission of the stream at the desired QoS parameter; if the is sufficient bandwidth, the bandwidth is reserved and the stream of data is sent to device in the secondary network])**.

Therefore, it would have been obvious to one of ordinary in the art at the time the invention was made to implement the method of Koga into the system of the references as applied above. The method of Koga can be implemented by implementing a QoS manager in the IEEE 1394 network. The motivation for this is to enable the system to keep track of bandwidth allocation of the secondary network (i.e. the Ethernet Network) wherein the information can be used to accept or reject transmissions destined for the secondary network.

Regarding claim 6, Fujisawa further discloses that the first communications system is an Ethernet network **(see Figure 1, Ethernet Sub-network 2)**.

Regarding claim 7, Fujisawa further discloses that the second communications network is an IEEE 1394 network **(see Figure 1, IEEE Sub-network 3)**.

Regarding claim 11, Fujisawa further discloses that the second modification process strips from a data packet received from the second communications network a data header associated the second network and where is the second modification process further converts the data packet into a format suitable for transmission to the first network**(column 5, lines 26-32 [the bridge transforms a packet from the Ethernet network into a predetermined format in the data link layer and transmits it to the 1394 network and vice-versa])**.

Regarding claim 12, Fujisawa discloses a method for adapting packets-based digital communications between a first communications network and a second communications network **(see Figure 1, Ethernet Sub-network 2, Bridge 4, and IEEE 1394 Sub-network 3 [packets of data are transmitted and received in the Ethernet network and the 1394 network via Bridge 4])**, said method comprising the steps of: detecting in a communication form a first device in the first communications network, a prioritized data packet, determining whether the prioritized data packet requires transmission to a second device in the second communications network **(column 12, lines 31-34 [the CPU in Bridge 4 determines if the packet is to be received by the Ethernet interface 13 or the 1394 interface 14])**, determining that said reserved data transmission channel has been opened **(column 4, lines 46-48 [the entire network is controlled according to TCP/IP, TCP incorporates a connection establishment stage, therefore either network has a protocol that allows for setup and**

communications on a channel; establishment/termination is done with an ACK/FIN message]) and modifying the data packet to be suitable for communications over the second communications network **(column 5, lines 26-32 [the bridge transforms a packet from the Ethernet network into a predetermined format in the data link layer and transmits it to the 1394 network and vice-versa])**. Fujisawa does not disclose determining a priority code associated with a data packet of said stream; determining whether to ,open a channel comprising an isochronous channel or an asynchronous channel in response to the priority code; using the presence of the priority code as an indication for setting up the channel for communicating information in said stream of packet based digital data to a second communications network. However, Ajanovic et al. discloses **separate VCs are used to map traffic that would benefit from different handling policies and servicing priorities. For example, traffic that requires deterministic quality of service, in terms of guaranteeing X amount of data transferred within T period of time, can be mapped to an isochronous (time dependent) virtual channel. Transactions mapped to different virtual channels may not have any ordering requirements with respect to each other. That is, virtual channels operate as separate logical interfaces, having different flow control rules and attributes (paragraph 0118)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Ajanovic et al. into the system of Fujisawa. The method of Ajanovic et al. can be implemented by enabling IEEE 1394 terminal to set up an isochronous connection based on the QoS determined from the

traffic. The motivation for this is to set up a reliable connection to send time sensitive information across the network.

The references as applied above do not explicitly disclose evaluating a portion of a data header contained in said prioritized data packet and requesting a bandwidth size based on the results of the evaluation. However, Koga discloses such a feature **(paragraphs 0049-0054 and see Figure 1 [the QoS manager receives a packet with a QoS parameter; the packet is determined to have to travel to second network of a different protocol; the manager determines whether there is sufficient bandwidth for the transmission of the stream at the desired QoS parameter; if the is sufficient bandwidth, the bandwidth is reserved by the QoS manager sending the network resources reserver a request and the stream of data is sent to device in the secondary network])**.

Therefore, it would have been obvious to one of ordinary in the art at the time the invention was made to implement the method of Koga into the system of the references as applied above. The method of Koga can be implemented by implementing a QoS manager in the IEEE 1394 network. The motivation for this is to enable the system to keep track of bandwidth allocation of the secondary network (i.e. the Ethernet Network) wherein the information can be used to accept or reject transmissions destined for the secondary network.

Regarding claim 13, Fujisawa further discloses that the first communications system is an Ethernet network **(see Figure 1, Ethernet Sub-network 2)**.

Regarding claim 14, Fujisawa further discloses that the second communications network is an IEEE 1394 network **(see Figure 1, IEEE Sub-network 3)**.

9. Claims 3, 10, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa (US 7,352,726) in view of Ajanovic et al. (US 2004/0044820) in view of Koga (US 2002/0141446)) as applied to claims 1, 5, and 12 above, and further in view of Brewer (6,657,999).

Regarding claim 3, the references as applied above disclose all the claimed subject matter recited in claim 1, but do not disclose the step of modifying header information comprises embedding an IP header associated with the data packet into an OSI Layer 3 header in the packet suitable for transmission over the second communications network. However, Brewer discloses such a feature **(see Figure 4b, steps 54 and column 16, lines 53-63 [a source host computer on the 1394 network sends a packet to a destination host computer of the Ethernet network via host computer H4, the link layer of Host Computer H4 changes the destination HPA of the packet so that the proper destination host computer receives that packet])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Brewer into the system of the references as applied above. The method of Brewer can be implemented by enabling Bridge 4 to change the destination HPA of the packet so that the proper destination host computer in the Ethernet network receives that packet. The motivation for this is to enable communication across differently structured networks

Regarding claim 10, the references as applied above disclose all the claimed subject matter recited in claim 5, but do not disclose the step of modifying header information comprises embedding an IP header associated with the data packet into an OSI Layer 3 header in the packet suitable for transmission over the second communications network. However, Brewer discloses such a feature **(see Figure 4b, steps 54 and column 16, lines 53-63 [a source host computer on the 1394 network sends a packet to a destination host computer of the Ethernet network via host computer H4, the link layer of Host Computer H4 changes the destination HPA of the packet so that the proper destination host computer receives that packet])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Brewer into the system of the references as applied above. The method of Brewer can be implemented by enabling Bridge 4 to change the destination HPA of the packet so that the proper destination host computer in the Ethernet network receives that packet. The motivation for this is to enable communication across differently structured networks.

Regarding claim 16, the references as applied above disclose all the claimed subject matter recited in claim 12, but do not disclose the step of modifying header information comprises embedding an IP header associated with the data packet into an OSI Layer 3 header in the packet suitable for transmission over the second communications network. However, Brewer discloses such a feature **(see Figure 4b, steps 54 and column 16, lines 53-63 [a source host computer on the 1394 network sends a packet to a destination host computer of the Ethernet network via host**

computer H4, the link layer of Host Computer H4 changes the destination HPA of the packet so that the proper destination host computer receives that packet]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Brewer into the system of the references as applied above. The method of Brewer can be implemented by enabling Bridge 4 to change the destination HPA of the packet so that the proper destination host computer in the Ethernet network receives that packet. The motivation for this is to enable communication across differently structured networks

10. Claims 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa (US 7,352,726) in view of Ajanovic et al. (US 2004/0044820) in view of Koga (US 2002/0141446) as applied to claims 5 and 12 above, and further in view of Walke et al. (US 7,016,676).

Regarding claim 8, the references as applied above disclose all the claimed subject matter recited in claim 5, but do not disclose that the second communications network is a HiperLAN/2 network. However, Walke et al. discloses such a feature **(column 5, lines 21-30 and 37-40 [central control station 13 controls access for the HiperLAN/2 network and the IEEE 802.11a network (802.11a is a wireless Ethernet standard)]).**

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Walke et al. into the system of the references as applied above. The method of Walke et al. can be implemented by

replacing the IEEE 1394 network with a HiperLAN/2 network. The motivation for this is to enable communications from Ethernet-HiperLAN/2 networks.

Regarding claim 15, the references as applied above disclose all the claimed subject matter recited in claim 12, but do not disclose that the second communications network is a HiperLAN/2 network. However, Walke et al. discloses such a feature **(column 5, lines 21-30 and 37-40 [central control station 13 controls access for the HiperLAN/2 network and the IEEE 802.11a network (802.11a is a wireless Ethernet standard)])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Walke et al. into the system of the references as applied above. The method of Walke et al. can be implemented by replacing the IEEE 1394 network with a HiperLAN/2 network. The motivation for this is to enable communications from Ethernet-HiperLAN/2 networks.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa (US 7,352,726) in view of Ajanovic et al. (US 2004/0044820) in view of Koga (US 2002/0141446) as applied to claim 12 above, and further in view of RFC 0793 (Transmission Control Protocol – September 1981),

Regarding claim 17, the references as applied above disclose all the claimed subject matter recited in claim 12, but do not disclose determining there is no more data to be received from the first device and establishing communications with the second device to close the reserved data transmission channel, However, RFC 0793 discloses

such a feature **(p. 16 of 88, lines 1-2 and p. 20 of 88, line 9 [receiving a FIN control flag indicated that there is no more data form sender and to clear the connection])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a FIN control flag to end a connection between to entities. The motivation for this is enable the system to effectively allocate and de-allocate bandwidth as connections are requested and terminated.

12. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa (US 7,352,726) in view of Ajanovic et al. (US 2004/0044820) in view of Koga (US 2002/0141446) as applied to claim 12 above, and further in view of Naudus (US 2002/0016837).

Regarding claim 18, the references as applied above disclose all the claimed subject matter recited in claim 12, but do not disclose closing the channel after a predetermined period of time within no further communications is received from the first device. However, Naudus discloses such a feature **(paragraph 0060, lines 11-14 [the nodes in the network monitor connections and terminate those connections that have been idle for a predetermined amount of time])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Naudus into the system of the references as applied above. The method of Naudus can be implemented by enabling Bridge 4 to monitor all connections and to terminate connections that have remained

idle for a period of time. The motivation for this is to effectively use limited network resources.

13. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa (US 7,352,726) in view of Ajanovic et al. (US 2004/0044820) in view of Koga (US 2002/0141446) as applied to claim 12 above, and further in view of Pathak et al. (WO 01/074096).

Regarding claim 19, the references as applied above disclose all the recited subject matter in claim 12. However, Pathak discloses that the communications with the second network are monitored for bandwidth for bandwidth usage and communications is established over the network when necessary to modify the amount of the reserved bandwidth based on the bandwidth usage **(p. 19, lines 2833 and p. 20, lines 1-3 [bandwidth is monitored to determine if a connection is able to be made; if resources are available, the bandwidth is allocated and the connection is made; after the communication is complete, the connection is torn down and the bandwidth is de-allocated])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Pathak et al. into the system of the references as applied above. The method of Pathak et al. can be established by enabling a device in the network to monitor the bandwidth usage. The motivation for this is to determine whether the connection can be set up.

Response to Arguments

14. Applicant's arguments, filed March 9th, 2011, have been fully considered and are persuasive, but deemed moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER WYLLIE whose telephone number is (571)270-3937. The examiner can normally be reached on Monday through Friday 8:30am to 6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARSHA D. BANKS HAROLD/
Supervisory Patent Examiner, Art Unit 2465

/Christopher T. Wyllie/
Examiner, Art Unit 2465